

AMENDMENTS TO THE CLAIMS

Claims 1-3 (CANCELED)

4. (CURRENTLY AMENDED) A position determining device for determining a position of a subject movable within a predetermined movement range, the position determining device comprising:

a relative position determiner for determining a relative movement amount of the subject with respect to a reference point; and


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cmf an absolute position determiner for determining an absolute position of the subject within the movement range; wherein said position determining device determines the position of the subject in accordance with data outputted from the absolute position determiner and said position determining device operates until the absolute position determiner detects the subject reaching a limit of the movement range; and

the reference point for determination of the relative position determiner is established at the limit of the movement range of the subject after the absolute position determiner detects the subject reaching the limit of the movement range, and the position determining device determines the position of the subject in accordance with data outputted from the relative position determiner, and upon activation of the positioning determining device, the position determining device

obtains the absolute position of the subject within the movement range outputted from the absolute position determiner.

5. (PREVIOUSLY PRESENTED) The position determining device according to claim 4, wherein:

the relative position determiner comprises an incremental rotary encoder and a counter for counting encode pulses outputted from the rotary encoder; and
the absolute position determiner comprises a potentiometer.

 6. (PREVIOUSLY PRESENTED) The position determining device according to claim 4, wherein the subject is a control member of a lens control unit for electrically controlling at least one of focus and zoom of a TV lens.

7. (PREVIOUSLY PRESENTED) A position determining device for determining a position of a subject movable within a predetermined movement range, the position determining device comprising:

a relative position determiner for determining a relative movement amount of the subject with respect to a reference point;

an absolute position determiner for determining an absolute position of the subject within the movement range; and

a storage device for previously storing standard output data of the absolute position determiner corresponding to a plurality of positions of the subject within the movable range, and previously storing standard output data of the relative position determiner corresponding to the standard output data of the absolute position determiner, the reference point for the standard output data of the relative position determiner being established at a limit of the movement range of the subject;

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wherein the position determining device obtains data outputted from the absolute position determiner upon being turned on and the position determining device then reads the standard output data of the relative position determiner corresponding to the obtained data outputted from the absolute position determiner from the storage device, and thereafter determines the position of the subject in accordance with data outputted from the relative position determiner with reference to the read standard output data of the relative position determiner.

8. (PREVIOUSLY PRESENTED) The position determining device according to claim 7, wherein the position determining device obtains a plurality of pieces of the data outputted from the absolute position determiner and data outputted from the relative position determiner to judge reliability of the obtained data outputted from the absolute position determiner upon being turned on.

9. (PREVIOUSLY PRESENTED) The position determining device according to claim 7, wherein:

the relative position determiner comprises an incremental rotary encoder and a counter for counting encode pulses outputted from the rotary encoder; and
the absolute position determiner comprises a potentiometer.

10. (PREVIOUSLY PRESENTED) The position determining device according to claim 7, wherein the subject is a control member of a lens control unit for electrically controlling at least one of focus and zoom of a TV lens.

11. (PREVIOUSLY PRESENTED) A method of determining a position of a subject movable within a predetermined movement range with a position determining device, the position determining device including a relative position determiner for determining a relative movement amount of the subject with respect to a reference point; and an absolute position determiner for determining an absolute position of the subject within the movement range; said method including the steps of:

determining the position of the subject with said position determining device in accordance with data outputted from the absolute position determiner;

operating said position determining device until the absolute position determiner detects the subject reaching a limit of the movement range, wherein the position determining device is turned on until the absolute position determiner detects the subject being at a limit of the movement range; and

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and
determining the reference point for determination of the relative position determiner at the limit of the movement range of the subject after the absolute position determiner detects the subject reaching the limit of the movement range, and determining the position of the subject in accordance with data outputted from the relative position determiner with the position determining device.

12. (PREVIOUSLY PRESENTED) A method of determining a position of a subject movable within a predetermined movement range with a position determining device, the position determining device including a relative position determiner for determining a relative movement amount of the subject with respect to a reference point; an absolute position determiner for determining an absolute position of the subject within the movement range; and a storage device for previously storing standard output data of the absolute position determiner corresponding to a plurality of positions of the subject within the movable range, said method comprising the steps of:

previously storing standard output data of the relative position determiner corresponding to the standard output data of the absolute position determiner;

determining the reference point for the standard output data of the relative position determiner at a limit of the movement range of the subject;

obtaining data outputted from the absolute position determiner with the position determining device upon the position determining device being turned on;

reading the standard output data of the relative position determiner corresponding to the obtained data outputted from the absolute position determiner from the storage device with the position determining device, and

determining the position of the subject in accordance with data outputted from the relative position determiner with reference to the read standard output data of the relative position determiner.

13. (NEW) The positioning determining device according to claim 4, wherein the absolute position determiner is used upon activation for determining the position of the subject without initializing the relative position determiner when the subject is within the limit of the movement range.

14. (NEW) The positioning determining device according to claim 4, wherein the relative position determiner is used for determining the position of the subject

when the subject is at the limit of the movement range.

check 15. (NEW) The positioning determining device according to claim 13,
wherein the relative position determiner is used for determining the position of the
subject when the subject is at the limit of the movement range.
